EXIDE®

BATTERY CHARGER

12/4

USER GUIDE

12 V Lead acid batteries 1-85 Ah

GB

THANK YOU FOR CHOOSING THIS CHARGER FROM EXIDE TECHNOLOGIES

Your new battery charger will enable you to keep your battery fully charged and will optimize performance and service life. This charger has been developed to be user-friendly, and contains the latest in charging technology.

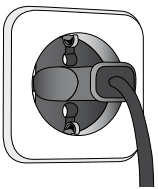
The unit can be stored in its packaging so that you protect the charger, keep cables tidy, keep the user guide safe, and at the same time protect the environment. Discarded packaging can be recycled.

Read the safety instructions and user guide carefully. If you follow the instructions, you will benefit from a high-performance charger that will give excellent service for many years to come.

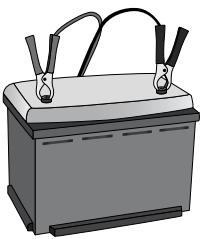
For more information about Exide and our products, please visit:
www.exide.nu www.tudor.se

Best regards
Exide Technologies

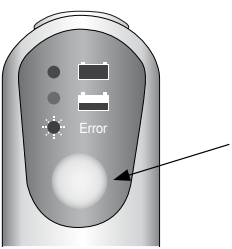
GETTING STARTED



1. Connect the charger's mains plug to a power socket.



2. Connect the charger's red cable clamp to the battery's positive terminal post (+) , and the black cable clamp to the battery's negative terminal post (-)



3. When the green lamp shines, the battery is fully charged.

This charger is fully automatic. When it has been connected, it will first charge the battery, and then maintain full charge as long as it is connected. The charger, which features a temperature compensator, provides optimum charging for lead-acid batteries, within a range of 1-85 Ah, and temperature.

USER GUIDE

(Read through the instructions before use):

1. Read the safety notes and take the stated precautions.

2. Connect the charger's mains plug to a power socket. The lamp on the front of the charger will come on.

3. Connect the charger's red cable clamp to the battery's positive terminal post (+), and the black cable clamp to the battery's negative terminal post (-). If the charger is correctly connected, the LED will flash orange for around 3 seconds. If the cables are incorrectly connected, the LED will change to a constant red. If that is the case, check the connection and adjust if accordingly.

4. Charging will begin automatically after 3 seconds, when the LED will stop flashing and changes to a constant orange. At the same time, the lamp on the front of the charger will go out.

5. When charging is complete, as indicated by a constant green light, the charger clamps can either be disconnected from the battery terminals or remain connected for permanent maintenance of charge. If the charger remains connected to the battery, it will switch to a maintenance charge of 13.7 volts as long as it is connected to the mains.

6. Charging may be interrupted at any time, by unplugging the charger's mains plug from the power socket.

7. Following completion of the charge, unplug the mains, disconnect the cable clamps from the battery terminals and return the charger to its original storage box for safe-keeping when not in use.

SAFETY NOTES

- This charger is constructed to charge 12 V lead-acid batteries. Do not use the charger for other purposes.
- Do not use the charger if its cables, terminal clamps or casing are damaged.
- Batteries emit explosive gases while they are charging. It is therefore important to ensure good ventilation and avoid sparks and naked flames in the vicinity of the battery.
- Use protective eyewear when working with batteries.
- Battery acid (electrolyte) is corrosive. If eyes or skin come into contact with the acid, rinse immediately with copious amounts of water, and contact a doctor immediately.
- Never charge a frozen battery.
- Never position the charger above the battery during charging.
- Do not cover the charger.
- This charger is protected against overheating. If the ambient temperature is too high, the charging current is reduced.
- During the charge, the charger may intermittently provide a 15.5 V charge voltage. Ensure that no equipment which may be damaged by this voltage level is connected to the battery during charging.

The product is not suitable for use by persons who lack knowledge or experience, if they are not supervised by, or have received information about how to use the product from a person who is responsible for their safety.

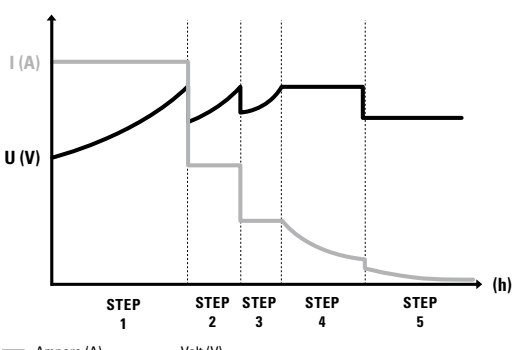
Do not allow children to play with any part of this product.

DESCRIPTION OF FUNCTIONS

The charger is fully automatic and programmed for advanced charging of lead-acid batteries between 1 and 85 Ah. The integrated safety functions that are intended to limit overcharging could interrupt the charge process when charging larger batteries than the charger is intended for.

This product is equipped with a temperature compensator, because temperature is highly significant for batteries' ability to receive charge. The temperature sensor is integrated in one of the terminal clamps. Thanks to our temperature compensation, the common problems involved in insufficient charging in cold weather and overcharging at high temperatures are eliminated.

The charging curve is shown on the attached diagram, which shows how the charge is split into five different steps that are adapted to the battery type and size. The charger must be connected to the battery according to the instructions in 'getting started'. After it is connected, it will charge the battery and maintain it fully charged with the continual maintenance charging as long as it is connected to the mains power.



In order to minimise the risk of overcharging an incorrect type of battery, the charger is equipped with a cut-out function that interrupts charging, at the same time as the fault is shown by the LED shining a constant red. NOTE: This fault alarm can be triggered during charging of batteries that have capacities above the

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recommended battery size or in connection with other equipment drawing current (parallel load) being connected to the battery during charging.

Batteries can be damaged by being charged at high temperatures, so the charger has been fitted with a safety function that interrupts charging when temperatures are too high, approx. 50 °C.

Information about faults and fault indications is explained in the table below.

FAULT INDICATIONS AND TROUBLESHOOTING

1.	**Fault:** The LED shows constant red when the charger cable clamps are connected to the battery terminal posts.
	Probable cause: If the cable clamps are incorrectly connected to the battery, the polarity reversal protection will be activated and charging will not start.
	Action: Check that the charger is connected using the correct polarity.
2.	**Fault:** Charging does not start, i.e. the lamp continues to light, and the LED does not change to the constant orange light.
	Probable cause: The battery voltage is too low to start the charger. This may be because the battery is worn or faulty or has been completely discharged.
	Action: Sometimes it may help to connect a functioning battery in parallel, as when using jump cables. If so: first disconnect the charger, then connect the batteries to each other by connecting their positive terminal posts (+) together using a jump cable, and then connecting the negative terminal posts (-) using the other jump cable. Then connect the charger and retry the process. If charging starts, disconnect the jump leads and allow charging to continue until the battery is fully charged. If charging does not begin the battery is probably defective and should be replaced.
3.	**Fault:** Charging started normally, but did not complete. Instead, the LED changed to constant red light and charging is terminated.
	Probable cause 1: Defective or worn battery. The battery has a fault that does not permit it to be charged, e.g. a short circuit.
	Action: Replace the battery.

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Probable cause 2: Parallel load. If a piece of equipment that drains current is connected to the battery, there is a risk that the capacity of the charger is not sufficient to charge the battery within the time constraints that are built into the charger for safety reasons.
Action: If possible, disconnect the parallel load and repeat charging, or purchase a larger charger suitable for both charge and drain.
Probable cause 3: Battery is too large. The battery is larger than the recommended size for the charger, which means that the charge could not be completed within the time constraints that are built into the battery for safety reasons.
Action: Repeat charging.
Probable cause 4: The high temperature cut-out that monitors the battery temperature has been triggered. The reason for the high temperature could be that the battery has an internal fault, or that the ambient temperature is high.
Action: If charging is carried out at room temperature, the high temperature is probably caused by a battery fault or wear. The battery should be replaced. If charging is taking place at a high ambient temperature, charging may be resumed when the battery has cooled to room temperature.

4.

Fault: The lamp does not come on when the charger is power cable plugged into the mains socket.
Probable cause: No power in mains socket. Lamp blown.

MAINTENANCE/ACCESSORIES

The charger is fully maintenance-free. Note that there are no user-serviceable parts, and opening this product (charger) will invalidate the warranty. If the mains cable is damaged it must be replaced by the retailer. Do not use the charger if its cables, terminal clamps or casing are damaged. The case may be cleaned using a soft, damp rag and a mild detergent. The charger must be disconnected from the mains when being cleaned. The charger is supplied with terminal clamps on each cable. Connecting cables with ring cable connectors for permanent fixture are enclosed in the box.

TECHNICAL SPECIFICATIONS

Model: EXIDE 12/4

EXIDE 12/4 is a primary-switched computer-controlled charger.

Input voltage	220-240 VAC +/-10%
Input current	Max 1 A
Back current	≤1 mA
Charge voltage	13,7 – 15,5 VDC
Charging current	Max 4 A
Ripple voltage	Max 70 mV
Ambient temperature	- 40 – + 50°C
Cooling	Convection
Type of charge	5 step, I_1, I_2, I_3, U, U_h U_h: 13,7 V (Maintenance charge)
Lead-acid battery types	AGM/GEL, standard batteries
Battery capacity	1 – 85 Ah
Cabling	Battery cable 1700 mm Power cable 2x0,75 mm^2 1800 mm
Dimensions (LxWxH)	225x50x50 mm
International Protection rating	IP54
Weight	0,5 kg

CE MANUFACTURER'S DECLARATION

Manufacturer: EXIDE Technologies, Kungälv, Sweden
and Primepower AB, Växjö, Sweden
Product: Battery charger EXIDE 12/4
The manufacturer guarantees that the
unit complies with the relevant standards.

Tested and approved by Intertek Semko.
www.exide.nu www.tudor.se

WARRANTY

We guarantee that this product is constructed to the highest quality specifications, and manufactured to the best industrial standard. If the product should prove to be faulty or has damage that can be related to manufacture or distribution, the mandatory guarantee rights apply.

The guarantee will no longer be valid if the charger has not been handled correctly, or opened or repaired by any other than Exide Technologies or its authorized representatives.

Exide Technologies is not responsible for other costs than those stated above, i.e. no potential consequential costs. Nor is Exide Technologies liable under any other warranty than this one.